

Remarks/Arguments:

Claims 1-15 are pending and stand rejected.

Rejection of Claims 1-5, 7-9, 11 and 13-15 under 35 U.S.C §103(a)

In the Office Action, at page 3, claims 1-5, 7-9, 11 and 13-15 are rejected under 35 U.S.C.§103(a) as being unpatentable over Applicant's Admitted Prior Art (AAPA) in view of Heinonen (U.S. Patent No. 5,896,562).

The Examiner has listed claim 13 in the rejection over AAPA in view of Heinonen. Applicants believe that the listing of claim 13 with regard to this rejection is incorrect. This is because, claim 13 depend from claim 12 which is included in the next rejection (over AAPA in view of Heinonen in further view of Castiglione et al. (U.S. Patent No. 7,079,616, hereafter referred to as Castiglione). Applicants will argue claim 13 with regard to the rejection which includes Castiglione.

This ground for rejection is respectfully traversed.

Claim 1

Claim 1 is directed to a digital signal transceiver, and recites:

... a frequency divider unit that switches between a modulating frequency divider and a non-modulating frequency divider, the non-modulating frequency divider receiving a signal output from the variable frequency oscillator and outputting a non-modulated signal, and the modulating frequency divider receiving the signal output from the variable frequency oscillator and a modulating signal and outputting the modulated signal.

That is, the first frequency divider unit switches between a modulating frequency divider (that receives (1) the signal output from the variable frequency oscillator and (2) a modulating signal and outputs the modulated signal) and a non-modulating frequency divider (that receives a signal output from the variable frequency oscillator and outputs a non-modulated signal).

AAPA Reference

In the Office Action, at page 4, the Examiner acknowledges that Applicant's admission of prior art fails to teach:

... a variable frequency oscillator and a first frequency divider unit that switches between a modulating frequency divider and a non-modulating frequency divider, the non-modulating frequency divider receiving a signal output from the variable frequency oscillator and outputting a non-modulated signal, and the modulating frequency divider receiving the signal output from the variable frequency oscillator and a modulating signal and outputting the modulated signal.

Applicants submit that the Examiner is correct. More particularly, the prior art discussed in Applicant's specification uses a frequency modulator as the oscillator for a transceiver in both transmitting and receiving modes. In both transmitting and receiving modes, the frequency modulator receives a modulating signal and outputs a frequency modulating signal. The prior art discussed in Applicant's specification does not disclose switching between a modulating frequency divider and a non-modulating frequency divider.

Heinonen reference

In the Office Action, at page 4, the Examiner contends that Heinonen teaches:

... a variable frequency oscillator (reads a voltage controlled oscillator VCO 341, wherein the output signal is amplified to form an output signal, the frequency of this signal is divided.) (Figure 3, column 5, lines 52-67) and

a first frequency divider unit that switches between a modulating frequency divider (read as divider 361) and a non-modulating frequency divider (read as divider 311), the non-modulating frequency divider receiving a signal output from the variable oscillator and outputting a non-modulated signal, and the modulating frequency divider receiving the signal output from the variable frequency oscillator and a modulating signal and outputting the modulated signal (Figure 3, column 5 lines 36-51 column 5 lines 52-67, and column 6 lines 13-28).

Applicants respectfully disagree with the Examiner's contention. Heinonen discloses a transmitter/receiver for transmitting and receiving an RF signal in two frequency bands (using DCS or GSM). The transmitter/receiver includes a synthesizer 340 which generates a signal having an output frequency controlled by changing the dividing number Y in a divider 342. (See Heinonen at column 5, lines 52-58). Thus, the output of synthesizer 340 is a non-modulated signal. The output of synthesizer 340, which is a non-modulated signal, is again frequency divided at frequency divider 311 and 361. The output of frequency divider 311 is provided to both the DCS and GSM receiver circuitry. (See Heinonen at column 5, lines 40-51.) The output

of frequency divider 361 is provided to both DCS and GMS transmitter circuitry. (See Heinonen at column 6, lines 1-12.) More particularly, the output of frequency divider 311 is connected through switches 315 and 335 to mixer 316 and 336, respectively and the output of frequency divider 361 is connected through switches 363 and 383 to mixers 362 and 382, respectively. Thus, the outputs of the signals from both frequency dividers 311 and 361 are non-modulated. This is because, for example, their outputs are connected to mixers 316, 336, 362 and 382. Thus, Heinonen does not disclose or suggest a modulating frequency divider corresponding to divider 361. Since Heinonen does not disclose a modulating frequency divider, Heinonen cannot disclose switching between a modulating frequency divider and a non-modulating frequency divider, as required by claim 1.

That is, Heinonen discloses only the use of **non-modulating** frequency dividers and the prior art discussed in Applicant's specification only discloses the use of **modulating** frequency dividers. More particularly, the AAPA and Heinonen are silent regarding the switching feature (i.e., "a first frequency divider unit that switches between a modulating frequency divider and a non-modulating frequency divider..."), as required by claim 1.

Accordingly, it is submitted that claim 1 patentably distinguishes over AAPA in view of Heinonen for at least the above-mentioned reasons.

Claims 8 and 14

Claims 8 and 14, which include similar but not identical features to those of claim 1, are submitted to be patentably distinguishes over AAPA in view of Heinonen for at least similar reasons to those of claim 1.

Claims 2-5, 7, 9, 11 and 15

Claims 2-5, 7, 9, 11 and 15, which include all of the limitations of claim 1 or claim 8 are submitted to patentably distinguish over AAPA in view of Heinonen for at least the same reasons as claim 1 or claim 8.

Rejection of Claims 6, 10 and 12 under 35 U.S.C. § 103(a)

In the Office Action, at page 15, claims 6, 10 and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over AAPA in view of Heinonen in further view of Castiglione. Applicants will also argue the rejection of claim 13 under this rejection.

Claim 12

Claim 12, which included similar but not identical features to those of claim 1, is submitted to patentably distinguish over AAPA in view of Heinonen for at least similar reasons to those of claim 1.

Claims 6 and 10

Claims 6 and 10, which include all of the limitations of claim 1 or 8, are submitted to patentably distinguish over AAPA in view of Heinonen for at least the same reasons as claim 1 or claim 8.

Castiglione Reference

The addition of Castiglione does not overcome the deficiencies of the AAPA in view of Heinonen. This is because, Castiglione which is used by the Examiner to teach the feature of a charge pump, merely discloses dividers 19 and 21 that generate a modulated signal. More particularly, in Castiglione, a modulator 24 supplies a signal to dividers 19 and 21 over lines 19a and 21a, respectively. (See Castiglione at column 3, lines 42-46.) Thus, Castiglione is silent regarding the switching feature (i.e., "a first frequency divider unit that switches between a modulating frequency divider and a non-modulating frequency divider...") as required by claim 1, claim 8 or claim 12.

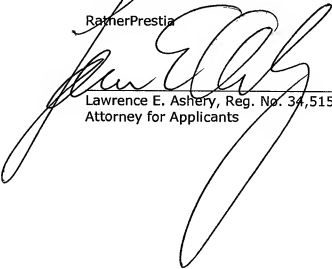
Accordingly, it is submitted that claims 6, 10 and 12 patentably distinguish over AAPA in view of Heinonen and in further view of Castiglione for at least the above-mentioned reasons.

Conclusion

In view of the remarks, Applicants submit the application is in condition for allowance, which action is respectfully requested.

Respectfully submitted,

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